

Augmented reality enables smart, hands-free productivity

Combined with other next-generation technologies,
AR delivers impressive capabilities.



Augmented reality technology, including smart glasses, connects employees to the digital world — improving productivity, efficiency and safety in the workplace. This next-generation digital user experience is transforming the way workers accomplish complex tasks.

Augmented reality uses smart glass technology to display text, pictures and holograms to the worker. The worker interacts through voice, gaze and gesture to create a totally hands-free interface.

While it may remind you of a scene from *The Terminator* or *RoboCop*, augmented reality (AR) is not science fiction. It is here and now, and it will change the way your workers connect.

Combined with cloud-based services and mobile applications, the latest AR and wearable technology can give workers critical information as they perform operations and repairs — totally hands-free.

Smart glass technology has progressed rapidly since the world was originally captivated by Google Glass and the Glass Explorers of 2013. Today, multiple vendors are delivering enterprise-class smart glasses with wireless technology, high-definition (HD) stereoscopic see-through displays, voice- and gesture-activated controls, HD cameras and integrated sensors. These devices have evolved into many forms of commercial wearables and are now practical work tools, robust enough to meet required safety standards and reliable enough for day-to-day use — and they're fast being deployed in the field.

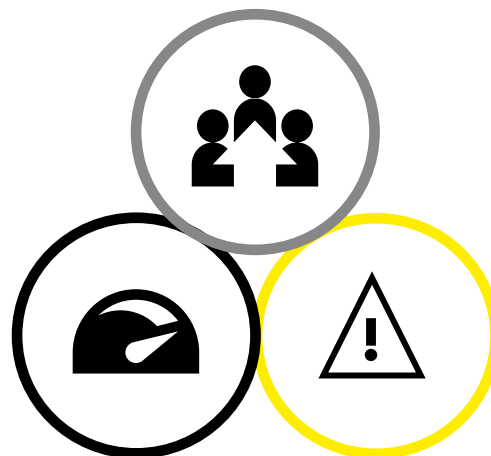
The result is a digitally connected workforce that is equipped to complete tasks more accurately, spend more time on the factory floor and keep production lines running with fewer interruptions. This means reduced downtime from equipment failures, lower operational costs for maintenance activities, and increased business efficiency.

Effectively use people

- Tap into remote experts
- Provide targeted information at the time it's needed
- Reduce time spent traveling
- Train more effectively
- Improve safety

Increase production

- Improve accuracy and quality of work
- Reduce rework and scrap
- Minimize production outages
- Improve coordination and supervision



Improve safety

- Provide checklists, inspections and audits
- Log incidents and incident investigations
- Deploy thermal imaging and other warning sensors
- Reduce exposure to travel risk

Leading manufacturers are using **augmented reality** technology to improve **productivity, efficiency** and **safety** in the workplace.

It's happening now

AR is transforming the future of work. From utilities, mining and manufacturing to retail and entertainment, AR adoption will explode as industries realize enormous productivity gains — the likes of which have not been seen for decades. As more companies seek to embrace the potential of AR, here are six ways that leading-edge manufacturers are using AR today:

1. **Connecting remote workers:** Enterprises can get massive benefits in effective collaboration by allowing an expert to view exactly what workers see and direct them to complete tasks. Technicians on the factory floor can inspect machinery or call on a remote expert to fix a production stoppage without waiting for the expert to travel to the facility. Asset productivity will improve as a result of better utilization.
2. **Assisting workers in complex tasks:** DXC has seen that using AR to overlay instructions can reduce error rates in manufacturing assembly tasks by as much as 90 percent. Smart glasses can overlay precise instructions onto the work area and accurately guide the technician through each step, thereby eliminating delays, increasing the ease of collaboration, minimizing disruptions and optimizing workforce management.
3. **Improving warehousing and logistics:** When efficient logistics translates to real profit, the ability to improve warehousing efficiency has enormous economic potential. Smart glasses are proven to provide 15 percent efficiency improvements for warehouse pick-and-place operations by effectively guiding workers and avoiding mistakes¹.
4. **Enhancing training and supervision:** AR training packages enable vastly more effective learning outcomes for workers who need to understand complex equipment or high-risk environments. Supervisors are also able to mentor and assess a worker's capability, resulting in higher quality work with fewer mistakes.
5. **Providing a shared understanding of a business operation:** AR technology in the boardroom creates a high-level view of your whole business, showing exactly what is happening and where. It allows managers and planners to communicate effectively using real-time data and analytics while understanding exactly what is happening on the shop floor — resulting in better operational decisions across your business.
6. **Monitoring worker safety:** Worker safety is the No. 1 concern for every business, and it's no exaggeration to say AR devices will save lives. Organizations will be able to monitor workplaces in real time and significantly reduce the "near-miss" incidents that are so commonly linked to fatalities.

The digital collaboration technology used in AR worker solutions can also make other emerging concepts possible, including crowdsourced expert networks. Inviting ideas from widespread groups, usually online, to solve a common problem can ensure that technicians or other workers in the field always have access to the remote support they need. An expert network service can also create good things down the road: Experts can author intelligent checklists for the next generation of augmented workers, and older workers can continue to contribute their knowledge in semiretirement or even retirement.

¹ DHL Supply Chain makes smart glasses new standard in logistics." DHL.com, 2017. http://www.dhl.com/en/press/releases/releases_2017/all/logistics/dhl_supply_chain_makes_smart_glasses_new_standard_in_logistics.html

Take AR beyond maintenance technicians

AR technology can have a significant impact on businesses even beyond asset-intensive industries such as automotive, manufacturing, oil and gas, transportation and high tech. Insurance assessors, for instance, can record damages to a property with remote support from a senior insurance assessor. Doctors can enhance surgeries with X-ray images and video overlays to assist with new surgical procedures. Banks can quickly resolve IT-related problems. Consider these use cases:

- **Insurance.** After a natural disaster, insurance companies simply do not have enough seasoned assessors to quickly and efficiently determine the damage. Using hands-free smart glass technology with remote viewing, insurance company employees and contractors can more easily assess property damage. An expert network of senior assessors can remotely guide whoever is onsite after the damage assessment begins. The entire assessment process can be recorded and stored for later review, which is particularly helpful in preventing fraudulent claims.
- **Healthcare.** AR is perfect for assisting in surgical procedures and providing the best possible patient care directly at the point of service. By using AR and smart glasses technology, doctors can share X-ray or computed tomography (CT) images with remote audiences anywhere in the world to consult and provide the best care for patients. The entire process can be shared in real time with colleagues or students. This solution not only assists medical personnel during actual surgeries, but is also an invaluable training tool for surgical residents learning procedures for the first time. The same technique can be used to give emergency responders at the scene of an accident real-time feedback and the chance to consult with emergency physicians.

In addition to helping people, AR can benefit animals and pets. A veterinary hospital has used AR technology with great success during surgery. Because of the close working conditions in the veterinary hospital surgical unit, it had been difficult to show others how to complete a process or procedure. But, by using a hands-free camera and a combination of audio and video, the veterinarian was able to demonstrate the surgical process to personnel in another room.

- **Banking.** Bank branches usually contain a small IT server room that is critical to branch operations and customer service. It is cost prohibitive to retain IT support resources at every branch location, so the bank — and its customers — often must wait for an IT support person to arrive onsite to repair the problem. This is costly and slow.

Now, bank tellers with minimal knowledge of the IT equipment can use a special AR app on a smartphone or tablet and follow a basic checklist to isolate the issue. Bank tellers simply issue the command “Call agent” and are then connected to an expert who can visually guide them through replacing a piece of IT equipment or resolving other problems.

Equip your workforce for the new reality

The nature of work is changing. AR technologies are workplace-ready and available now. Businesses that don't adopt them will be significantly disadvantaged. Early adopters will reap the benefits of radically increased productivity and the competitive advantage it provides. To be globally competitive, your workforce needs to be equipped with the right tools.

Contact DXC Technology to better understand how you can improve the safety, productivity and efficiency of your workforce.

About the authors



Jarrod Bassan is a practice partner in digital technology at DXC. Jarrod specializes in augmented reality technology and has spent years helping the world's largest companies plan and implement programs that enable new operating models through technology.



Nathalie Vancluysen is the global offering manager for extended reality (XR) and wearables. She is responsible for the Augmented Reality and Virtual Reality portfolio as part of DXC Workplace & Mobility. Nathalie focuses on developing new products for the digital workplace, while working together with key customers and partners.

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